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SPECIFICATION NO. 59-A-1091-A

TASK OUTLINE FOR THE DEVELOPMENT  
OF A TWISTER MEMORY CORE



25X1

19 May 1959

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1. ✓ This Task Outline stipulates the requirements for the development of a Solid-state Memory Device for use as an Off-line Keyer. The combination of this memory core and the KE-9 circuitry shall form an Off-line keyer with non-destructive readout features.
2. ✓ The KE-9 Keyer equipment and/or the technical characteristics of the keyer shall be supplied to the Contractor as Government Furnished Equipment. The KE-9 keyer is capable of transmitting twelve different International Telegraph Functions.
3. ✓ The Solid-state memory device to be developed under this Task shall use the ~~twistor technique~~. The memory core shall have a total storage capacity of at least 50 words, each word shall consist of six characters. Each character will be a teletype function of five pulses forming a combination of ones and zeros.
4. ✓ The twistor memory core shall be capable of receiving, storing, and reading out a total of twelve different teletype characters. The twelve teletype characters to be transmitted are identical to the characters transmitted by the KE-9 Keyer.
5. (5.) Readin Features - The twistor elements of the memory core shall be capable of receiving a teletype function transmitted by the KE-9 Keyer. The memory core shall be packaged separately from the KE-9. The interconnection of these equipments may be either accomplished by direct coupling or through cables.
6. ✓ Readout Features - The readout features of this memory core shall be non-destructive, Readout circuitry shall be provided and shall be such as to enable serial readout with insertion of a Start and Stop pulse to each character as they are transmitted. The duration or pulse width of each bit of information shall be 22 milliseconds, plus or minus three percent. The Stop pulse in International Telegraph is normally 31 milliseconds. To simplify the design of the circuitry, the Stop pulse may have a width of 44 milliseconds, plus or minus three percent.
7. (7.) Size - The non-destructive Off-line keyer shall have a form factor of no more than 6 x 3½ x 1½ inches and a total volume of no more than 31.5 cubic inches. The Contractor shall make every effort to further reduce this size and volume.
8. (8.) Power Supply - The power supply to be used with the Off-line keyer shall use the conventional size "D" cells described in the Instruction Manual for the KE-9 Portable Electronic Keyer. The method of the battery connection, and the types of batteries shall also apply.
9. ✓ Transmit Control - Transmit control shall be placed in such a position to allow the operator to automatically transmit the stored information contained within the memory core when the device is concealed on the person.

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|-------------|---|--|------------------|
| <b>10.1</b> | <b>Initial Prototype</b>                | Initial prototype equipment described by the Task Outline shall be delivered for a testing period of 60 days.  | 1 Each           |
| <b>10.2</b> | <b>Final Prototype</b>                  | After approval of 10.1 models of the final prototype shall incorporate all modifications that are required.  | 4 Each           |
| <b>10.3</b> | <b>Operation and Maintenance Manual</b> | Operation and Maintenance Manual shall contain operating instructions photographs, schematics and a complete parts list with Manufacturer nomenclature   | 10 Each          |
| <b>10.4</b> | <b>Engineering Drawings</b>             | Master copy<br>reproducible  | 2 Each<br>1 Each |
| <b>10.5</b> | <b>Bi-monthly Reports</b>               | Bi-monthly reports shall be submitted not later than 15 days after the end of the reporting period and shall describe the work performed during the reporting period.  | 5 Each           |
| <b>10.6</b> | <b>Final Report</b>                     | A final report shall be submitted not later than 60 days after the expiration of the period of services performed under the contract. The final report shall clearly describe in detail the research and/or development performed under this contract and shall not reference the Bi-monthly reports required under this Task Outline. |                  |

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